

This listing of claims replaces all prior versions and listings of claims in the application.

**In the Claims:**

1-5. (canceled)

6. (currently amended) ~~The HBT according to claim 5 wherein~~ A heterojunction bipolar transistor (HBT), comprising:

a collector;

an intrinsic base overlying said collector, said intrinsic base including a layer of a single-crystal semiconductor alloy;

a raised extrinsic base including a first semiconductive layer overlying said intrinsic base and a second semiconductive layer formed on said first semiconductive layer, said first semiconductive layer being etch distinguishable from said second semiconductive layer; and

an emitter overlying said intrinsic base, said emitter disposed in an opening of said first and second semiconductive layers, such that said raised extrinsic base is self-aligned to said emitter,

wherein said first semiconductive layer has a first composition  $\text{Si}_{x1}\text{Ge}_{y1}$ , where  $x1$  and  $y1$  represent percentages of silicon and germanium of said first composition, respectively, and said second semiconductive layer has a second composition  $\text{Si}_{x2}\text{Ge}_{y2}$ , where  $x2$  and  $y2$  represent percentages of silicon and germanium of said second composition, respectively, said percentages  $y1$  and  $y2$  of germanium being sufficiently different to make said first semiconductive layer etch distinguishable from said second

semiconductive layer and at least one of said percentages  $y_1$  and  $y_2$  of germanium varies as a function of vertical position over a thickness of said first semiconductive layer or said second semiconductive layer, respectively.

7. (currently amended) ~~The HBT according to claim 5~~ A heterojunction bipolar transistor (HBT), comprising:

a collector;

an intrinsic base overlying said collector, said intrinsic base including a layer of a single-crystal semiconductor alloy;

a raised extrinsic base including a first semiconductive layer overlying said intrinsic base and a second semiconductive layer formed on said first semiconductive layer, said first semiconductive layer being etch distinguishable from said second semiconductive layer; and

an emitter overlying said intrinsic base, said emitter disposed in an opening of said first and second semiconductive layers, such that said raised extrinsic base is self-aligned to said emitter,

wherein said first semiconductive layer has a first composition  $Si_{x_1}Ge_{y_1}$ , where  $x_1$  and  $y_1$  represent percentages of silicon and germanium of said first composition, respectively, and said second semiconductive layer has a second composition  $Si_{x_2}Ge_{y_2}$ , where  $x_2$  and  $y_2$  represent percentages of silicon and germanium of said second composition, respectively, said percentages  $y_1$  and  $y_2$  of germanium being sufficiently different to make said first semiconductive layer etch distinguishable from said second semiconductive layer and~~wherein~~ said first semiconductive layer has a first dopant

concentration, and said second semiconductive layer has a second dopant concentration, wherein at least one of said first and second dopant concentrations varies as a function of vertical position over a thickness of said first semiconductive layer or said second semiconductive layer, respectively.

8. (currently amended) The HBT according to claim 4—6 wherein said second semiconductive layer consists essentially of an alloy of silicon and germanium and said first semiconductive layer consists essentially of silicon.

9. (currently amended) The HBT according to claim 5—6 wherein said second semiconductive layer has a substantially greater percentage of germanium than said first semiconductive layer.

10. (original) The HBT according to claim 9 wherein said second semiconductive layer has substantially greater thickness than said first semiconductive layer.

11. (currently amended) ~~The HBT according to claim 9~~ A heterojunction bipolar transistor (HBT), comprising:

a collector;

an intrinsic base overlying said collector, said intrinsic base including a layer of a single-crystal semiconductor alloy;

a raised extrinsic base including a first semiconductive layer overlying said intrinsic base and a second semiconductive layer formed on said first semiconductive

layer, said first semiconductive layer being etch distinguishable from said second semiconductive layer; and

an emitter overlying said intrinsic base, said emitter disposed in an opening of said first and second semiconductive layers, such that said raised extrinsic base is self-aligned to said emitter,

wherein said first semiconductive layer has a first composition  $\text{Si}_{x1}\text{Ge}_{y1}$ , where  $x1$  and  $y1$  represent percentages of silicon and germanium of said first composition, respectively, and said second semiconductive layer has a second composition  $\text{Si}_{x2}\text{Ge}_{y2}$ , where  $x2$  and  $y2$  represent percentages of silicon and germanium of said second composition, respectively, said percentages  $y1$  and  $y2$  of germanium being sufficiently different to make said first semiconductive layer etch distinguishable from said second semiconductive layer, said second semiconductive layer has a substantially greater percentage of germanium than said first semiconductive layer and wherein said first semiconductive layer has a first dopant concentration, and said second semiconductive layer has a second dopant concentration, wherein said first and said second dopant concentrations are substantially different from each other.

12. (currently amended) The HBT according to claim ~~9~~11 wherein said first and second semiconductive layers include at least portions having a single-crystal structure.

13. (currently amended) The HBT according to claim ~~4~~6 wherein said raised extrinsic base includes a low resistance layer formed above said second semiconductive layer,

said low resistance layer including at least one material selected from metals and metal silicides.

14. (currently amended) The HBT according to claim 13 wherein said low resistance layer includes a salicide, said salicide being a self-aligned silicide formed by depositing a layer of silicon over said second semiconductive layer, depositing a metal onto said silicon layer, and reacting said metal with said layer of silicon to form said salicide.

15-29. (canceled)